

### **Abstract of the Disclosure**

Chlorinated ethylene-decomposition bacteria is detected by performing PCR using nucleic acid comprising 18 ~ 25 nucleotides that preferentially hybridizes to the 16S rRNA or rDNA of chlorinated ethylene-decomposing bacteria and has any of base sequences of SEQ ID No. 1 ~ 15, a base sequence that has at least 90% homology with any of these base sequences, or a base sequence complementary to any of these base sequences as the primer and the nucleic acid in a sample as the template. The DNA fragment that has been synthesized is detected. Chlorinated ethylene or ethane is decomposed by introducing the chlorinated ethylene-decomposing bacteria detected by this method to contaminated soil or underground water.